An Introduction to Steam Outsourcing

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One evolving trend in the boiler replacement business is the movement to outsource the equipment, installation, and operation and maintenance—called the build, own, operate, and maintain (BOOM) market.

Increasingly, companies no longer desire to allocate capital to "non-core" assets. Since most corporations define utilities as "non-core," the BOOM market is "booming" in certain sectors–particularly in large corporations with multi-plant operations (and colleges and universities).

What is beginning to emerge, especially among Fortune 500 companies, is that utility and operational people are realizing that capital will not be allocated for a boiler replacement despite being beyond its useful life. These people are being urged by CEO's and CFO's to find solutions elsewhere.

As a result, energy service companies (ESCOs) and lending institutions are developing services that satisfy the requirements of these companies. This is building awareness and momentum for utility asset outsourcing agreements.

Further, as companies continue to reduce staff, many of the people they have let go are those who have the know-how and experience to efficiently run steam plants. This further motivates management to seek outside expertise who can effectively manage and operate a steam system.

Environmental concerns are driving this trend as well. Those with coal systems are often concerned about the changing emission standards and regulations in the near term. This creates another driver to outsource this responsibility to an ESCO. The regulatory uncertainty and the continual capital required to keep in compliance can be draining. With BOOM, companies can avoid this distraction and accurately budget their steam energy expenses.

In a typical BOOM contract, the service provider is responsible for the design, engineering, procurement, construction, financing, and operation and maintenance of the entire system. Ownership of the installed equipment does not necessarily transfer to the client at the end of the term. However, the client user can purchase the system when the BOOM contract expires.

The client user pays the provider for the services by paying for the steam supplied from the ESCO's boiler. In fact, with the structure of some arrangements, the steam costs can be lower then what the user was incurring before the ESCO arrived.

This can make BOOM arrangements very appealing. Certain ESCOs can provide capital for new boilers, design and install them, and own, operate, and maintain them for steam costs less than what the facility was originally incurring. Additionally, the site now has on-site experts, with an entire organization behind them, to provide services that will drive down energy costs by constantly discovering and implementing energy efficiency projects.

While strong economics is the main motivator for entering into a BOOM contract, there are some other factors beyond capital avoidance and lack of experience and manpower pushing these agreements. For example, a company desires to mothball an existing steam plant because of systemic inefficiency of the generating assets. It can make better economic sense to outsource the entire ownership of the steam plant including the O&M. Similarly, a company may be having trouble controlling energy costs. Management has grown impatient watching the steady increase in total utility operating costs and desire to reduce or control these costs by turning over the responsibility and risk to an ESCO.

Other factors include:

- Utility-supplied steam is no longer available.
- Due to market fluctuations, an existing cogeneration plant becomes inefficient.
- Utility rates are high.
- Lack of system reliability is a growing concern.

Case in point:

A Fortune 500 food processing facility, which manufactures 5,000 products sold in 200 countries, was exploring utility cost reduction options for its Midwest facility because its boilers were aged.

At this facility, it produces gravies, ketchup, sauces and soups. The facility has total annual combined utility costs of more than $4 million. The plant's thermal demand is 340 million pounds of steam

per year and it has an electric power demand of 19.1 million kW per year.

The $9 billion per year corporation opted for a BOOM contract for its Midwest facility, selling the powerhouse assets to a technology based ESCO. The contract stipulates that the ESCO owns and operates the facility for 16 years in an agreement valued in excess of $64 million.

The ESCO installed two new 2,800 horsepower watertube steam boilers as the primary source for thermal energy requirements. The ESCO also installed a new air compressor and sequencing control package to manage the 718,000 thousand cubic feet annual demand.

The ESCO performed turnkey design and implementation of steam, compressed air, electric, and wastewater projects to increase utility efficiency and generate energy cost savings at the plant. Further, as part of its ownership responsibility, it provides a continual sustaining engineering service to ensure continued benefits of the implemented projects.

The ESCO agreement structure affords this company numerous benefits:

- It received an up-front capital payment for its powerhouse assets.
- The overall utility cost has been reduced at this facility.
- No capital from the company was required to produce savings.
- The ESCO will aggressively pursue utility and project savings opportunities throughout the term of this agreement.
- Operations and maintenance risk have been transferred to the ESCO.
- The company is billed for all utility services on a variable basis correlated to product produced.
- The ESCO reviews and pays all utility bills.
- Utility systems are continuously being upgraded and improved to achieve “Best in Class” condition.

Therefore, in reviewing how this ESCO installed this new boiler for this food processing facility, one can see that the customer received a substantial cash payment, avoided having to provide millions of the company’s own capital for upgrades, and had its overall utility expenses reduced. If the food processor chose the conventional method, it would have millions less in capital available to grow their business.

If boiler upgrade/replacement is needed, a facility owner/manager should not hesitate to determine if this new trend in boiler replacements could be economically attractive at the facility.